AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions, and listings, of claims in the application.

1. (Original) A method of identifying a border of a vascular object, comprising: acquiring multiple sets of blood-vessel data, each set corresponding to an image of a vascular object; using a set of blood-vessel data to approximate a border on an image of said vascular object; identifying at least one control point on said border; extrapolating said at least one control point to at least one other set of blood-vessel data, creating at least one other control point on at least one other image; using said at least one other control point to approximate at least one other border on said at least one other image; and adjusting said at least one other border in accordance with at least a gradient factor.

2. (Original) The method of claim 1, wherein said step of acquiring multiple sets of blood-vessel data further comprises acquiring multiple sets of intra-vascular ultrasound (IVUS) data, where each set corresponds to an IVUS image of said vascular object.

3. (Original) The method of claim 1, wherein said step of using a set of blood-vessel data to approximate a border further comprises identifying gradients in said image and using said gradients to approximate said border on said image of said vascular object.

4. (Original) The method of claim 1, wherein said step of extrapolating said at least one control point further comprises extrapolating said at least one control point to an adjacent set of blood-vessel data, said adjacent set corresponding to another image adjacent to said image.

5. (Original) The method of claim 1, wherein said step adjusting said at least one other border further comprises adjusting said at least one other border in accordance with at least a continuity factor, said continuity factor representing an amount of continuity between adjacent control points on said at least one other border.

6. (Original) The method of claim 1, wherein said step of adjusting said at least one other border further comprises adjusting said at least one other border in accordance with at least a curvature factor, said curvature factor representing an amount of continuity between adjacent portions of said at least one other border.

7. (Original) The method of claim 5, wherein said step of adjusting said at least one other border further comprises adjusting said at least one other border in accordance with at least a curvature factor, said curvature factor representing an amount of continuity between adjacent portions of said at least one other border.

8. (Original) The method of claim 4, further comprising automatically adjusting an adjacent border if said border is manually adjusted, said adjacent border being located on said another image.

9. (Original) A border-identification system comprising: a computing device adapted to be electrically connected to a data-gathering device and to acquire from said data-gathering device multiple sets of blood-vessel data, each set corresponding to an image of a vascular object; a border-detection application operating on said computing device and adapted to use at least a portion of said blood-vessel data to produce starting-border data and starting-control-point data, said starting-border data representing at least one border on at least one image of said vascular object and said starting-control-point data representing at least one control point on said at least one border; an extrapolation application operating on said computing device and adapted to use said starting-control-point data to produce additional-control-point data and additional-border data, said additional-control-point data representing at least one other control point on at least one other image and said additional-border data representing at least one other border on said at least one other image; and an active-contour application operating on said computing device and adapted to adjust said at least one other border.

10. (Original) The border-identification system of claim 9, wherein said data-gathering device comprises an intra-vascular ultrasound (IVUS) console.

11. (Original) The border-identification system of claim 9, wherein said border-detection application is further adapted to identify gradients in said at least one image and use said gradients to produce starting-border data.

12. (Original) The border-identification system of claim 11, wherein said border-detection application is further adapted to use said starting-border data to produce said starting-control-point data.

13. (Original) The border-identification system of claim 9, wherein said extrapolation application is further adapted to produce said additional-border data by using cubic interpolation to connect adjacent ones of said at least one other control point.

14. (Original) The border-identification system of claim 9, wherein said active-contour application is further adapted to use gradient data to adjust said at least one other border, said gradient data representing gradients in said at least one other image.

15. (Original) The border-identification system of claim 14, wherein said active-contour application is further adapted to consider the continuity of adjacent ones of said at least one other control point in adjusting said at least one other border.

16. (Original) The border-identification system of claim 15, wherein said active-contour application is further adapted to consider the curvature of said at least one other border in adjusting said at least one other border.

17. (Original) The border-identification system of claim 9, wherein said active-contour application is further adapted to adjust said at least one other border in accordance with at least one factor, said at least one factor being selected from the group consisting of a gradient factor, a continuity factor and a curvature factor.

18. (Original) A method of identifying a boundary on an intra-vascular ultrasound (IVUS) image, comprising: using a plurality of control points on a first IVUS image to identify additional control points on a second IVUS image; using said additional control points to identify a boundary on said second IVUS image; adjusting said boundary in accordance with at least one factor, said at least one factor being selected from a group consisting of gradient factor, control-point factor and boundary factor, where said control-point factor corresponds to the connectivity of adjacent ones of said additional control points and said boundary factor corresponds to the curvature of said boundary.

19. (Original) The method of claim 18, further comprising using at least a portion of first IVUS data to identify said plurality of control points, said first IVUS data corresponding to said first IVUS image.

20. (Original) The method of claim 18, wherein said step of using a plurality of control points on a first IVUS image to identify additional control points on a second IVUS image further comprises extrapolating said plurality of control points on said second IVUS image.